

REMARKS

Claims 105, 129-134, and 184-186 are now pending in the application.

DRAWINGS

The drawings stand objected to for failing to comply with 37 CFR 1.84(p)(5). The brief description of the drawings notes a line 6—6 in Fig. 6 that does not exist. There is, however, one single line in Fig. 6 identified as line 7—7. Applicants have amended the specification on page 17 at line 12 to correct this obvious error.

Reference signs 28B, 28C, 28D, 28E, and 28F appear in Figures 8-18 but were not mentioned in the description. The paragraph beginning on page 19, line 12 has been amended to refer to these reference signs. Applicants believe the identity of the reference signs is apparent from the context of this original paragraph, from the figures themselves, and from the description of these figures in the Brief Description of the Drawings section.

Reference signs 130 and 132 appear in Figure 20 but are not mentioned in the description. Reference sign 170 appears in Figure 21 but is not mentioned in the description. Applicants present replacement figures in which reference signs 130, 132, and 170 have been removed.

Applicants request that the replacement drawings be entered. Applicants request withdrawal of the objections to the drawings in view of the amendments made.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 105 and 129-134 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Mitchell et al. (U.S. Pat. No. 5,952,065), as evidenced by a Technical Information sheet on Pellethane 2355-80AE from Dow Plastics (The Dow Chemical Company). This rejection is respectfully traversed with respect to the amended claims.

The present claims require that the polyurethane itself having a gas transmission rate of about 15.0 or less. The Mitchell patent does not teach using a thermoplastic polyurethane that has such a gas transmission rate. The only reference Applicants can find in Mitchell to the gas transmission rate of a thermoplastic polyurethane is Figure 19, which indicates a gas transmission rate more than twice as high – 30.21 – for a TPU monolayer. The Mitchell patent teaches that, prior to the Mitchell invention, the art had employed single-layer gas barrier films of rigid materials such as PVDC. Col. 3, lines 6-14. As the technology advanced, these films were combined with a flexible film layer to overcome difficulties such as poor elasticity and flex fatigue. Col. 3, lines 14-28. The Mitchell patent offers an improved laminate, but a laminate that still has a rigid gas barrier material and a flexible material that has poor gas barrier properties. The flexible thermoplastic polyurethane of the examples, as already pointed out, has a gas transmission rate of a little over 30. The Mitchell flexible thermoplastic polyurethane provides superior heat sealing properties, flexural fatigue strength, a suitable modulus of elasticity, tensile, and tear strength, and abrasion resistance. Col. 9, lines 11-16. It is the rigid, inner layer of gas barrier materials that is “primarily responsible for controlling gas permeation.” Col. 9, lines 36-37.

Regarding claims 129-134, Applicants note that the claim language has been amended to positively recite the articles into which the cushioning device is incorporated. Thus, the claims are now directed to a seat or protective equipment comprising a cushioning device as described in claim 105. These claims are not anticipated for the additional reason that the reference does not disclose these articles.

Because the Mitchell patent does not teach or disclose a thermoplastic polyurethane that has a gas transmission rate of about 15.0 or less, the Mitchell patent does not anticipate the present claims. Accordingly, Applicants respectfully request withdrawal of the rejection and reconsideration of the claims.

Claims 105 and 129-134 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Murakami (U.S. Pat. No. 5,578,372). This rejection is respectfully traversed with respect to the amended claims.

Applicants respectfully disagree with the statement in the Office Action that one would recognize packaging films as forming cushioning devices. The packaging in the Murakami patent does not appear to be a cushioning device in any sense. There appears to be no allusion at any point to cushioning or cushioning devices. Thus, Applicants respectfully submit that the Office Action has made a conclusory, unsupported statement that does not support an argument of anticipation.

Further, with regard to the requirements of anticipation, the Murakami patent does not name any particular polyester that is formed into a polyurethane, and does not provide any example of a polyurethane having a gas transmission rate of less than about 15.0 for nitrogen gas for an average thickness of approximately 20.0 mils. Instead, the

measured oxygen permeability is expressly due to vinylidene chloride content of the film, as the Office Action recognizes. Concerning patentability of the present invention over this reference, one can find no teaching or direction in the Murakami patent to distinguish between one polyurethane or another for making the Murakami films. On this basis as well, then, Applicants submit that the claims are not anticipated by, and are patentable over, the Murakami patent.

Finally, as noted above with respect to the Mitchell patent, the amendments of claims 129-134 overcome the Office Action's argument that the claims as previously written refer only to a possible further use. The amended claims are directed to seats and protective equipment, and are not anticipated by the Murakami patent.

Accordingly, Applicants respectfully request withdrawal of the rejection and reconsideration of the claims.

Claims 51-52 and 189 were rejected under 35 U.S.C. § 102(e) as being anticipated by Martin (U.S. Pat. No. 4,513,058). Each of these claims was cancelled, however, making this rejection moot.

REJECTION UNDER 35 U.S.C. § 103

Claims 184-186 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Massara et al. (U.S. Patent 5,562,324) in view of Mitchell et al. (U.S. Pat. No. 5,952,065). This rejection is respectfully traversed.

As discussed above with regard to the rejection for anticipation by the Mitchell patent, the Mitchell patent does not teach a thermoplastic polyurethane itself having a gas

transmission rate of about 15.0 or less, nor does the Mitchell reference suggest how one of ordinary skill in the art might go about preparing such a material. The Massara patent also does not teach or describe such a material. Thus, the claims are patentable over the cited combination of references.

Accordingly, Applicants respectfully request withdrawal of the rejection and reconsideration of the claims.

Claims 184-186 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Massara et al. (U.S. Patent 5,562,324) in view of Martin (U.S. Pat. No. 4,513,058). The Massara patent describes air bladders as back supports in the lumbar region of the seat. The Massara patent, however, does not describe a cushioning device formed from a membrane comprising: a thermoplastic polyester polyol-containing polyurethane with a gas transmission rate of less than about 15.0 for nitrogen gas for an average thickness of approximately 20.0 mils.

The Martin patent explicitly teaches that its control of air permeation arises from a coating of EVOH, polyamide, or vinylidene chloride. The Martin patent thus leads one in the art away from trying to formulate a polyurethane that would itself provide some measure of control of air permeation.

The combined references thus fail to suggest the present invention. Applicants respectfully request withdrawal of the rejection and reconsideration of the claims.

REJECTION FOR DOUBLE PATENTING

Claims 105 and 129-134 stand rejected for obviousness-type double patenting over claims claim 1 of U.S. Patent No. 6,013,340. This rejection is respectfully traversed.

The claims presented in patent application 08/571,160 (which issued as US Patent 6,013,340) were subject to a 12-way restriction requirement between the separate inventions represented by Group I claims 1-50, 56, and 69-73 and Group X, claims 100-103 and 105-149. Applicants elected Group I for prosecution, and these claims were amended and eventually issued in US Patent 6,013,340. The present application contains claims only from Group X.

Because the USPTO determined that the claims were drawn to distinct invention, required the Applicants to elect only one invention and cancel claims to the other in the former application, Applicants submit that it is now improper for the Office to reject the claims to the independent invention restricted for obviousness-type double patenting.

Accordingly, Applicants respectfully request that this rejection be withdrawn. Reconsideration of the claims is requested.

Claims 184-186 stand rejected for obviousness-type double patenting over claims claim 1 of U.S. Patent No. 6,013,340 in view of Massara et al. This rejection is respectfully traversed.

Claims 184-186 are also directed to the invention of Group X, which was restricted from the application that eventually issued in US Patent 6,013,340. Because the USPTO determined that the claims were drawn to distinct invention, required the

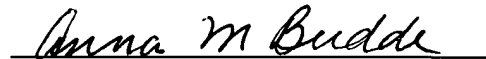
Applicants to elect only one invention and cancel claims to the other in the former application, Applicants submit that it is now improper for the Office to reject the claims to the independent invention restricted for obviousness-type double patenting.

Accordingly, Applicants respectfully request that this rejection be withdrawn. Reconsideration of the claims is requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,



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AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings include changes to Figures 20 and 21. The attached sheets, which includes Figures 19-23, replace the original sheets including Figures 19-23.

A copy of the original sheets highlight the changes in red ink.

COPY SHOWING CHANGES

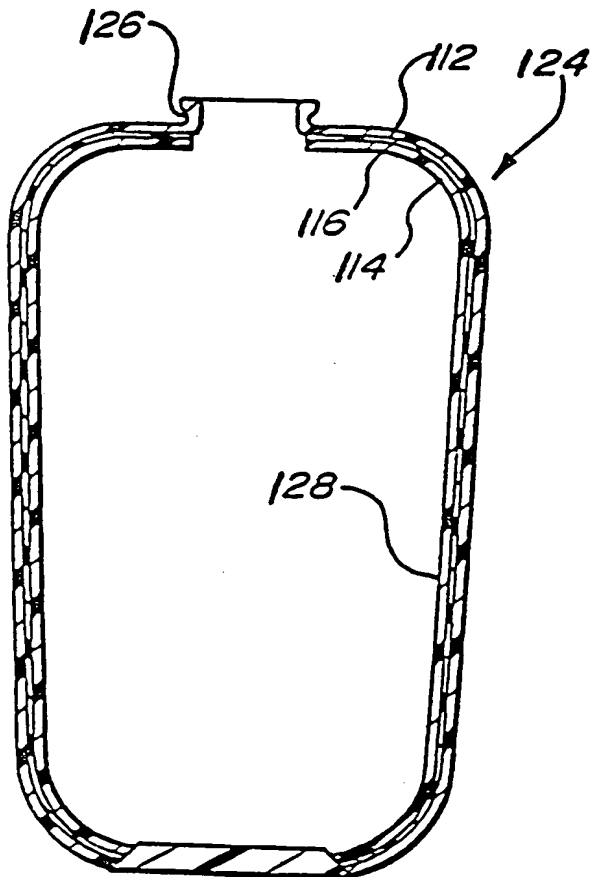


Fig-19

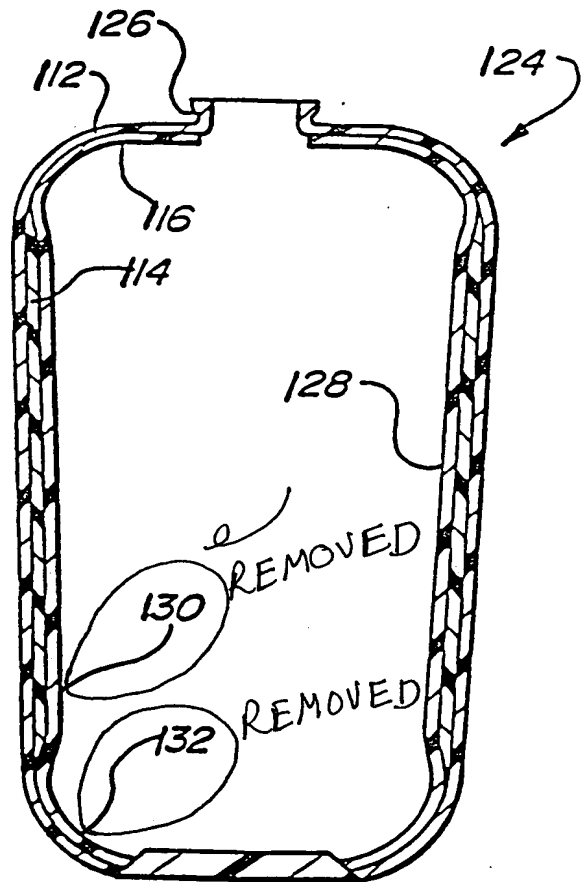


Fig-20

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COPY SHOWING CHANGES

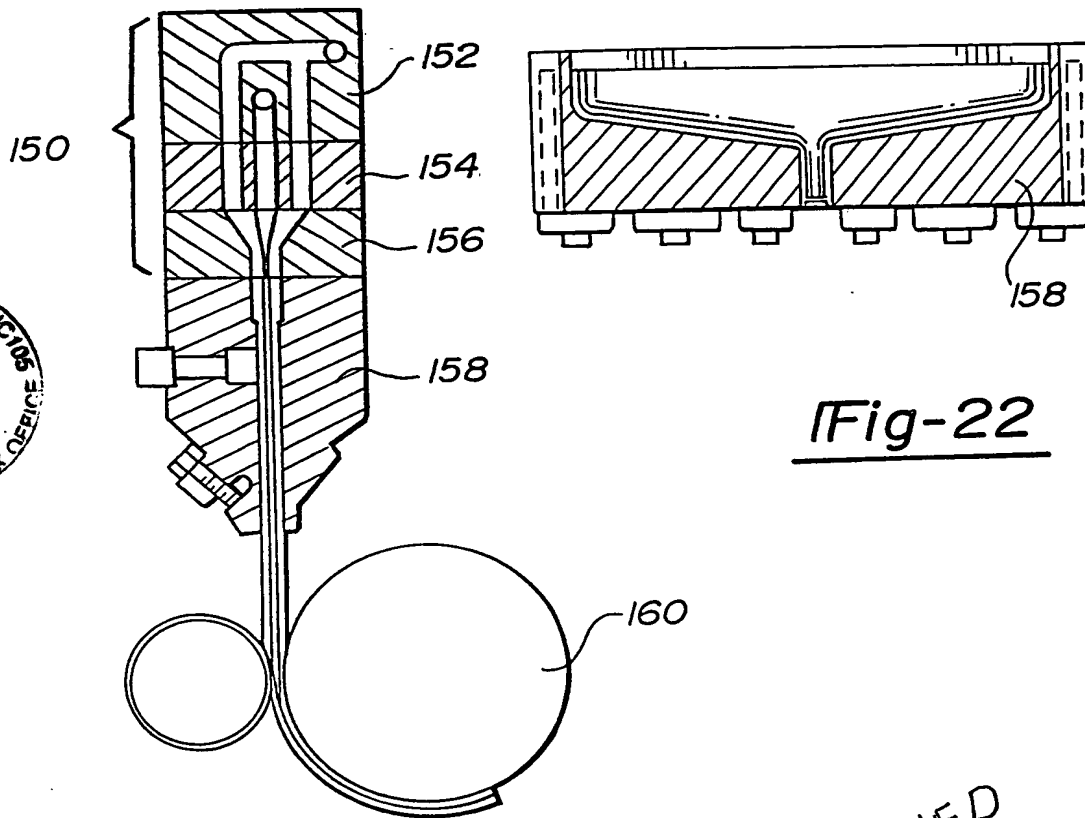


Fig-22

Fig-21

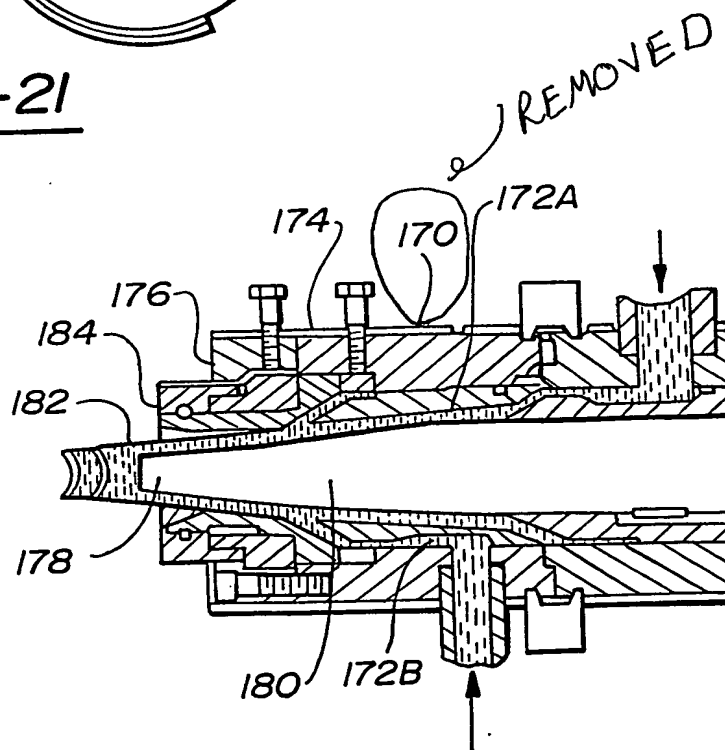


Fig-23

